Drawings

A proposed drawing correction for Fig. 11A showing the view embraced by a bracket is submitted herewith on separate sheets. Approval of the proposed drawing correction is respectfully requested.

Claim Amendments

Claims 1 and 8 have been amended to more clearly recite Applicant's invention. Support for the language added to claim 1 is found in the specification at page 26, lines 3-26, for example. No new matter has been added.

Claim Rejections--35 U.S.C. §112, first paragraph

Withdrawal of the rejection of claims 1-15 under 35 U.S.C., first paragraph, is respectfully requested. Although Applicant believes there is sufficient support in the specification and drawings for the rejected language "without circulation" in claim 1, the language has been removed from claim 1.

Claim Rejections--35 U.S.C. §112, second paragraph

Withdrawal of the rejection of claims 1-15 under 35 U.S.C., second paragraph, is respectfully requested.

Although Applicant believes that the meaning of the rejected language "without circulation" in claim 1 is clear based on the specification and drawings, the language has been removed from claim 1 to overcome the rejection.

The Examiner rejected claims 1-15 because it was unclear to the Examiner whether the claims were directed to a chemical supply system or a combination of the chemical supply system and a chemical treatment chamber. Applicant respectfully disagrees with the rejection and submits that the rejection is without justification. A chemical treatment chamber was recited in the body of claim 1 and clearly was an element that further defined applicant's invention. Nonetheless, the recitation of the chemical treatment chamber has been removed from the body

of the claim to overcome the rejection.

With regard to the rejection of claim 6, Applicant filed a Supplemental Amendment via facsimile on November 29, 2002, in which claim 6 was amended to depend from claim 2, which recites a shaker. Therefore, there is sufficient antecedent basis for the language "said shaker" in claim 6. A copy of the Supplemental Amendment is submitted herewith for the Examiner's consideration. Applicant respectfully requests entry of the Supplemental Amendment in the event that it has not already been entered.

Claim Rejections--35 U.S.C. §102

Withdrawal of the rejection of claims 1, 3, 5, 8, 9, 11-13 and 15 under 35 U.S.C. §102(e) as being anticipated by Hashimoto et al. (USP 5,918,976), is requested.

Claim 1 has been amended to recite:

> A chemical supply system for supplying a mixture solution to a chemical treatment chamber, wherein said mixture solution includes a liquid chemical mixed and diluted with a solvent, said chemical supply system comprising:
>
> at least one chemical reservoir that is easy to carry, wherein said liquid chemical is stored in said chemical reservoir at a high concentration;
>
> a piping system in which said solvent flows, wherein said piping system includes a discharge portion for said mixture solution at an end portion thereof; and
>
> a chemical supply means for feeding out a predetermined quantity of said liquid chemical from said chemical reservoir into a connecting pipe;
>
> a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent to produce said mixture solution at a described uniform concentration.

In order for anticipation to exist, a reference must teach each and every element of a claimed invention. "The identical invention must be shown in as complete detail as is contained in the... claim". Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Hashimoto et al. does not recite "a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent to produce said mixture solution at a described uniform concentration" as recited in present claim 1. Therefore, Hashimoto et al. does not anticipate claim 1, or dependent claims 3, 5, 8, 9, 11-13 and 15.

Withdrawal of the rejection of claims 1, 8, 9, 12 and 15 under 35 U.S.C. §102(b) as being anticipated by Rodgers et al. (USP 4,664,528), is requested. Rodgers et al. does not recite "a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent to produce said mixture solution at a described uniform concentration" as recited in present claim 1. Therefore, Rodgers et al. does not anticipate claim 1, or dependent claims 8, 9, 12 and 15.

Withdrawal of the rejection of claims 1, 3, 8, 12, 13 and 15 under 35 U.S.C. §102(b) as being anticipated by Cadeo et al. (USP 4,964,732), is requested. Cadeo et al. does not teach or suggest "a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent to produce said mixture solution at a described uniform concentration" as recited in present claim 1. Therefore, Cadeo et al. does not anticipate claim 1, or dependent claims 3, 8, 12, 13 and 15.

Withdrawal of the rejection of claims 1, 8-10, 13 and 15 under 35 U.S.C. §102(b) as being anticipated by O'Dougherty et al. (USP 5,522,660), is requested. O'Dougherty et al. does not teach or suggest "a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent to produce said mixture solution at a described uniform concentration" as recited in present claim 1. Therefore, O'Dougherty et al. does not anticipate claim 1, or dependent claims 8-10, 13 and 15.

Withdrawal of the rejection of claims 1, 3, 8, 9 and 13-15 under 35 U.S.C. §102(e) as being anticipated by Suzuki et al. (USP 5,800,056), is requested. Suzuki et al. does not teach or suggest "a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent to produce said mixture solution at a described uniform concentration" as recited in present claim

1. Therefore, Suzuki et al. does not anticipate claim 1, or dependent claims 3, 8, 9 and 13-15.

Claim Rejections--35 U.S.C. §103

Withdrawal of the rejection of claim 5 under 35 U.S.C. §103(a) as being unpatentable over Rodgers et al., Cadeo et al., O'Dougherty et al. or Suzuki et al. in view of Pawloski et al. (USP 3,738,815), is requested.

In order for a claimed invention to be obvious, all of the claim recitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA/974). As stated above, Rodgers et al., Cadeo et al., O'Dougherty et al. and Suzuki et al. do not teach or suggest "a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent such that said mixture solution is produced at a described uniform concentration" as recited in base claim 1. Pawloski et al. also does not teach or suggest those elements of claim 1 that are lacking in Rodgers et al., Cadeo et al., O'Dougherty et al. and Suzuki et al. Therefore, the combinations proposed by the Examiner do not render claim 5 obvious.

Withdrawal of the rejection of claim 7 under 35 U.S.C. §103(a) as being unpatentable over Rodgers et al., Cadeo et al., O'Dougherty et al. or Suzuki et al. in view of Shibata et al. (USP 4,787,921), is requested. As previously stated, Rodgers et al., Cadeo et al., O'Dougherty et al. and Suzuki et al. do not teach or suggest "a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent to produce said mixture solution at a described uniform concentration" as recited in base claim 1. Shibata et al. also does not teach or suggest those elements of claim 1 that are lacking in Rodgers et al., Cadeo et al., O'Dougherty et al. and Suzuki et al. Therefore, the combinations proposed by the Examiner do not render claim 7 obvious.

Withdrawal of the rejection of claims 1, 8, 9, 12 and 15 under 35 U.S.C. §103(a) as being unpatentable over Rodgers et al. in view of Ferri, Jr. et al. (USP 5,803,599) is respectfully

requested. For the reason stated above, Rodgers et al. does not teach or suggest all the elements of claim 1. Ferri, Jr. et al. does not teach or suggest those elements of claim 1 that are lacking in Rodgers et al. Therefore, the combination suggested by the Examiner does not render independent claim 1 or dependent claims 8, 9, 12 and 15 obvious.

Withdrawal of the rejection of claims 1, 3, 8, 12, 13 and 15 under 35 U.S.C. §103(a) as being unpatentable over Cadeo et al. in view of Ferri, Jr. et al. is respectfully requested. For the reason stated above, Cadeo et al. does not teach or suggest all the elements of claim 1. Ferri, Jr. et al. does not teach or suggest those elements of claim 1 that are lacking in Cadeo et al. Therefore, the combination suggested by the Examiner does not render independent claim 1 or dependent claims 3, 8, 12, 13 and 15 obvious.

Withdrawal of the rejection of claims 1, 8-10, 13 and 15 under 35 U.S.C. §103(a) as being unpatentable over O'Dougherty et al. in view of Ferri, Jr. et al. is respectfully requested. For the reason stated above, O'Dougherty et al. does not teach or suggest all the elements of claim 1. Ferri, Jr. et al. does not teach or suggest those elements of claim 1 that are lacking in O'Dougherty et al. Therefore, the combination suggested by the Examiner does not render independent claim 1 or dependent claims 8-10, 13 and 15 obvious.

Allegedly Operational/Functional Claim Language

Applicant traverses the Examiner's assertion that claims 1, 3, 6, 14 and 15 include language that is merely operational and functional. Claim 1, as amended, more positively recites the structure of the claimed invention. Applicant submits that, contrary to the Examiner's assertion, the disregarded language in the claims meaningfully defines the elements of the invention and their structural relationship to one another. The Examiner's failure to consider these elements is without merit.

Allowable Subject Matter

Applicant thanks the Examiner for the indication of allowable subject matter in claims 2 and 4.

New Claim

New claim 63 is directed to a chemical supply system for supplying a mixture solution for cleaning a substrate. Support for a chemical supply system for a substrate cleaning apparatus is provided in the specification at page 15, lines 21-23, for example. Support for the other elements in claim 63 is provided in originally filed claim 1. No new matter has been added.

Claim 63 is believed to be allowable over the cited references, as none of the cited references teach or suggest a chemical supply system for supplying a mixture solution for cleaning a substrate.

Conclusion

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

The Examiner is respectfully requested to enter this Amendment After Final, in that it raises no new issues, but merely places the claims in a form more clearly patentable over the references of record. In the alternative, the Examiner is respectfully requested to enter this Amendment After Final in that it reduces the issues for appeal.

The Director is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185.

Respectfully submitted,

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Version With Markings to Show Changes Made

1. (Twice Amended) A chemical supply system for supplying a mixture solution to a chemical treatment chamber, wherein said mixture solution includes a liquid chemical mixed and diluted with a solvent, said chemical supply system comprising:

at least one chemical reservoir that is easy to carry, wherein said liquid chemical is stored in said chemical reservoir at a high concentration;

a piping system in which said solvent flows [without circulation], wherein said piping system includes a discharge portion for said mixture solution at an end portion thereof; and

a chemical supply means for [sucking] feeding out a predetermined quantity of said liquid chemical from said chemical reservoir into a connecting pipe [and feeding said solvent with said liquid chemical];

a chemical discharging means connecting said connecting pipe to said piping system and arranged to discharge said liquid chemical from said connecting pipe into said solvent in the piping system at a linear velocity that is significantly greater than a linear velocity of said solvent to produce [, wherein a necessary quantity of said liquid chemical is mixed with said solvent flowing in said piping system and] said mixture solution [is produced] at a described uniform concentration[, and wherein said mixture solution is supplied from said discharge portion to said chemical treatment chamber].

8. (Twice Amended) The chemical supply system of claim 1, [further comprising:

a connecting flow passage connecting said piping system and said chemical supply means; and

a] wherein said chemical discharging means comprises a capillary disposed in said connecting pipe[flow passage and directly connected to said piping system for discharging said liquid chemical into said solvent].